

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA**

**ALFA LAVAL TANK EQUIPMENT,
INC.**

Plaintiff,

v.

SPRAYING SYSTEMS CO.

Defendants.

Civil Action No. __-cv-__

Jury Trial Demanded

COMPLAINT

Plaintiff, Alfa Laval Tank Equipment, Inc. (“Alfa Laval”), by and through its undersigned counsel, alleges as follows:

NATURE OF THE ACTION

1. This is a civil action arising under the laws of the United States, **specifically** for patent infringement arising under the Patent Laws of the United States, Title 35 of the United States Code, §§ 1 *et seq.*

THE PARTIES

2. Alva Laval is a Delaware corporation having a principal place of business at 604 Jeffers Circle, Exton, PA 19341.

3. Upon information and belief, Defendant Spraying Systems Co. (“Spraying Systems”) is an Illinois Corporation having a principal place of business at 161 N. Clark St., Ste. 3100, Chicago, Illinois 60601.

JURISDICTION AND VENUE

4. This is an action for patent infringement arising under the patent laws of the United States, specifically, under Title 35 of the United States Code. This Court has subject matter jurisdiction over this action under 35 U.S.C. § 271 *et seq.* pursuant to 28 U.S.C. §§ 1331-32 and 1338(a).

5. This Court has personal jurisdiction over Defendant Spraying Systems at least because, upon information and belief, Defendant Spraying Systems has substantial, continuing, and on-going contacts with this State and regularly conducts business in this State. Further, upon information and belief, Defendant Spraying Systems has sold and continues to sell into this State and judicial district the product at issue in this case. In particular, upon information and belief, Defendant Spraying Systems has offered for sale, sold and continues to sell a tank cleaning machine under the brand name TankJet® 55A (“the Accused Product”) in this State and judicial district via its local sales and engineering office located at Almaka Corporation, 6 Dickinson Drive, Ste. 210, Chadds Ford, PA 19317.

6. Venue is proper in this judicial district pursuant to Title 28, U.S.C. §§ 1391(b)-(d) and § 1400(b), because Defendant Spraying Systems has the requisite minimum contacts with, regularly conducts business in, and has at least one local sales and engineering office in this judicial district. Further, venue is proper in this Court because acts of patent infringement are occurring within this State and judicial district.

FACTS

7. Plaintiff, Alfa Laval is the owner of U.S. Patent No. 6,561,199 (“199 patent”), issued by the United States Patent and Trademark Office on May 13, 2003 and entitled, “Cleaning Apparatus Especially Adapted For Cleaning Vessels Used For Sanitary Products, and

Method Of Using Same.” A true and correct copy of the ‘199 patent is attached to this Complaint as Exhibit A.

8. Plaintiff, Alfa Laval is the assignee of all right, title and interest in and to the ‘199 patent and possesses all rights of recovery under the ‘199 patent, including the right to sue for past infringement and recourse for damages, via a chain-of-title including an assignment, which was recorded in the United States Patent and Trademark Office (“PTO”) on May 31, 2001 at Reel 11863, beginning at Frame 429 from the inventors to Gamajet Cleaning Systems, Inc. and an assignment, which was recorded in the PTO on September 4, 2012 at Reel 28894, beginning at Frame 643 from Gamajet Cleaning Systems, Inc. to Alfa Laval Tank Equipment, Inc.

9. The ‘199 patent is valid and enforceable and the term of the ‘199 patent will expire on or about July 6, 2021, in view of a 36-day patent term adjustment

10. Defendant, Spraying Systems is engaged in manufacturing, offering to sell, selling, using, and/or importing the Accused Product, which is the same as or legally equivalent to the invention claimed in the ‘199 patent.

11. A sample of the Accused Product was purchased by Alfa Laval, which included an “Operation and Maintenance Instructions” manual, a copy of which accompanied the Accused Product upon delivery and is attached hereto as Exhibit B.

12. Plaintiff, Alfa Laval conducted a thorough investigation of the Accused Product and determined that it was covered by one or more claims of the ‘199 patent. Accordingly, on March 6, 2015, a representative of Plaintiff, Alfa Laval sent a letter, a copy of which is attached as Exhibit C, to the CEO of Defendant, Spraying Systems regarding the ‘199 patent including a copy of the ‘199 patent. A representative for Defendant, Spraying Systems sent a response letter

on May 6, 2015, a copy of which is attached as Exhibit D. The response letter did not address the issue of infringement of the '199 patent by the Accused Product.

13. Upon information and belief, Defendant, Spraying Systems continues to use, manufacture, sell, offer for sale, and/or import the Accused Product in the United States.

14. Defendant, Spraying Systems has not sought, nor obtained, a license under the '199 patent and is not authorized or permitted to market, manufacture, use, offer for sale, sell or import any products embodying the invention disclosed and claimed in the '199 patent.

COUNT I
INFRINGEMENT OF THE '199 PATENT

15. Plaintiff, Alfa Laval re-alleges and incorporates by reference paragraphs 1 through 14 of this Complaint, as though fully set forth herein.

16. The '199 patent is presumed valid pursuant to 35 U.S.C. § 282.

17. Upon information and belief, Defendant, Spraying Systems, in violation of 35 U.S.C. § 271, has been and is currently infringing one or more of the claims of the '199 patent, either literally or under the doctrine of equivalents, by making, causing to be made, using, offering for sale, selling and/or importing into the United States, without license or authority, at least the Accused Product.

18. Upon information and belief, Defendant, Spraying Systems has willfully infringed and will continue to willfully infringe one or more of the claims of the '199 patent through use, manufacture, offer for sale, sale and/or importation of the Accused Product, unless enjoined by this Court from doing so.

19. As a result of Defendant, Spraying Systems' willful infringement of the '199 patent, Plaintiff, Alfa Laval has been damaged to an extent not yet determined.

20. Plaintiff, Alfa Laval is entitled to monetary damages adequate to compensate it for infringement by Defendant, Spraying Systems of the '199 patent, is entitled to increased damages under 35 U.S.C. § 284, together with interest, costs and attorney's fees, and is entitled to enjoin Defendant, Spraying Systems from further infringement of the '199 patent.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Alfa Laval respectfully requests all legal and equitable relief as may be recoverable for the foregoing offenses, including:

- (a) a preliminary injunction enjoining Defendant, Spraying Systems and all those in active concert or participation with it, from infringing one or more claims of the '199 patent, *pendente lite*;
- (b) a permanent injunction enjoining Defendant, Spraying Systems, and those in active concert or participation with it, from infringing one or more claims of the '199 patent;
- (c) a judgment that Defendant, Spraying Systems infringes one or more claims of the '199 patent;
- (d) an accounting for damages arising from the infringement of one or more claims the '199 patent by Defendant, Spraying Systems and those in privity with it;
- (e) an award of damages adequate to compensate for the infringement one or more claims the '199 patent, together with prejudgment and post-judgment interest thereon, and costs fixed by the Court, as provided by 35 U.S.C. § 284;
- (f) a judgment that the infringement of one or more claims the '199 patent was and is willful, and an award to Plaintiff, Alfa Laval of increased damages in accordance with 35 U.S.C. § 284;

(g) a declaration that this is an exceptional case and that Plaintiff, Alfa Laval be granted reasonable attorneys' fees in accordance with 35 U.S.C. § 285; and

(h) a grant to Plaintiff, Alfa Laval of any such other relief as the Court may deem just, equitable, or proper.

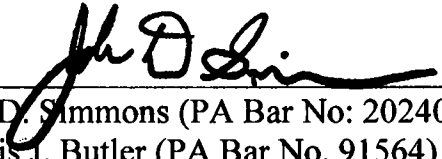
DEMAND FOR JURY TRIAL

Pursuant to Fed. R. Civ. P. 38, Plaintiff hereby demands a trial by jury on all issues so triable.

Dated: August 21, 2015

PANITCH SCHWARZE BELISARIO & NADEL, LLP

By: _____


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Attorneys for Plaintiff, Alfa Laval Tank Equipment, Inc.

EXHIBIT A



US006561199B2

(12) **United States Patent**
Gleeson et al.

(10) Patent No.: **US 6,561,199 B2**
 (45) Date of Patent: **May 13, 2003**

(54) **CLEANING APPARATUS ESPECIALLY ADAPTED FOR CLEANING VESSELS USED FOR SANITARY PRODUCTS, AND METHOD OF USING SAME**

(75) Inventors: **Bentley F. Gleeson**, Plymouth Meeting, PA (US); **Andrew K Delaney**, West Chester, PA (US); **Minh Quang Le**, Fairfax, VA (US); **Robert F. Delaney**, Devon, PA (US)

(73) Assignee: **Gamajet Cleaning Systems, Inc.**, Malvern, PA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 36 days.

(21) Appl. No.: **09/870,963**

(22) Filed: **May 31, 2001**

(65) **Prior Publication Data**

US 2002/0179118 A1 Dec. 5, 2002

(51) Int. Cl.⁷ **B08B 9/093; B05B 3/00**

(52) U.S. Cl. **134/22.18; 134/24; 134/167 R; 239/227; 239/240; 239/246**

(58) Field of Search **134/22.18, 24, 134/167 R, 180, 181; 239/263, 263.3, 227, 240, 246**

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Primary Examiner—Randy Gulakowski

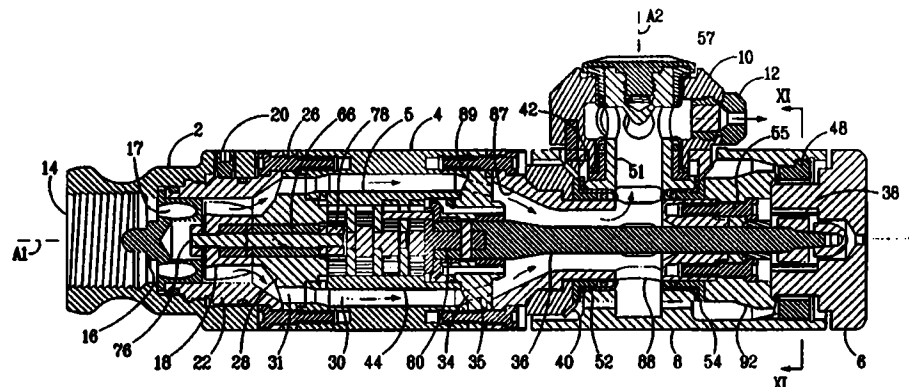
Assistant Examiner—Saeed Chaudhry

(74) Attorney, Agent, or Firm—Woodcock Washburn LLP

(57) **ABSTRACT**

An apparatus for cleaning the interior of a vessel for containing a sanitary product by ejecting a rotating stream of cleaning fluid. The apparatus features a stationary housing that forms an inlet for receiving a flow of cleaning fluid, a rotatable housing mounted for rotation on the stationary housing about a first axis, and a nozzle for ejecting the cleaning fluid, the nozzle being rotatably mounted on the rotatable housing so that the nozzle rotates about a second axis. A planetary gear train is driven by an impeller driven by the flow of cleaning fluid and drives the rotation of the rotatable housing. The planetary gear train is located between the apparatus inlet and the nozzle. A portion of the flow of cleaning fluid received by the inlet is diverted so as to flow through a passage through the planetary gear train so that the planetary gear train is cooled and lubricated without the use of oil-based or other lubricants unsuitable for contact with sanitary products that might contaminate the cleaning fluid.

18 Claims, 6 Drawing Sheets



US 6,561,199 B2

Page 2

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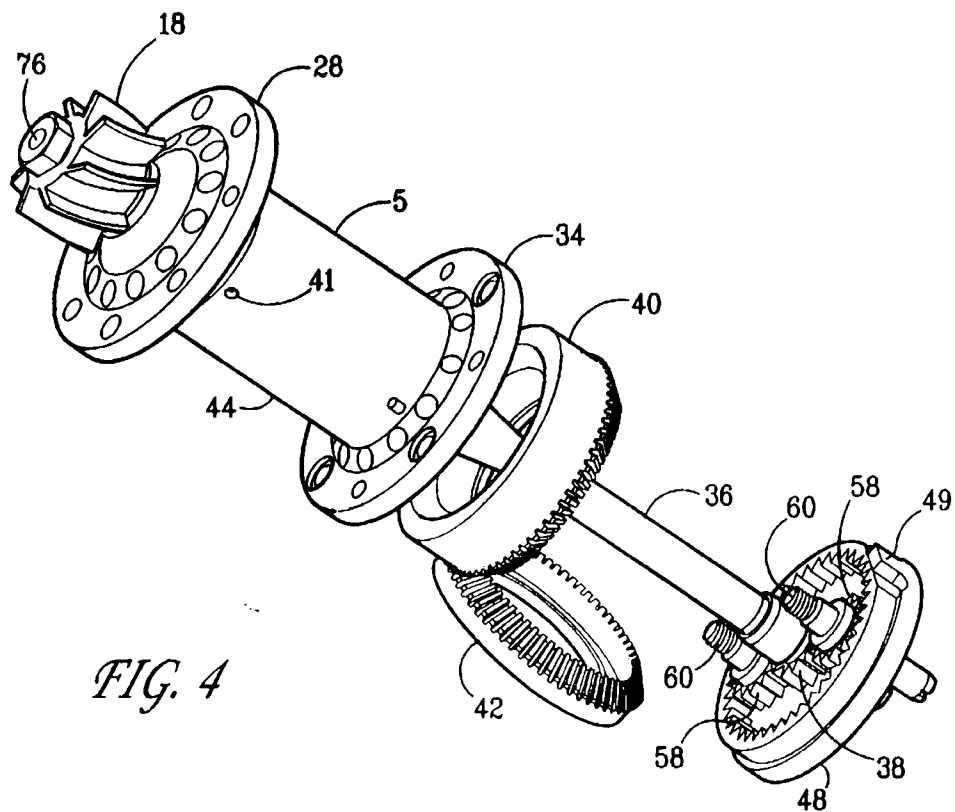
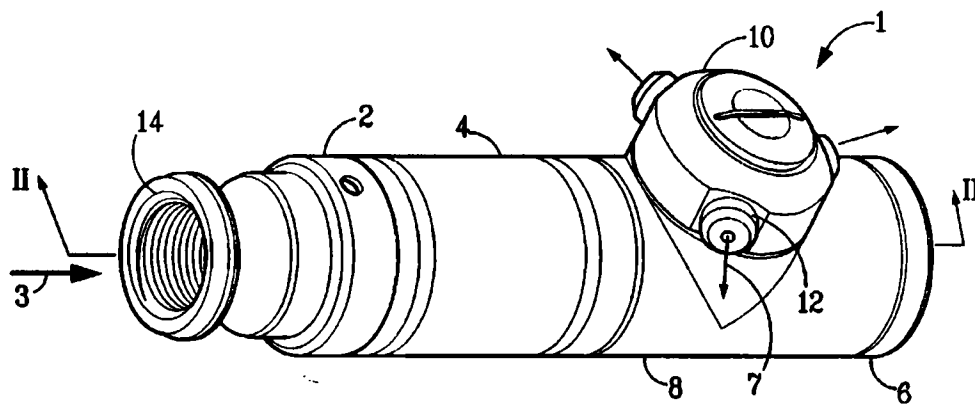
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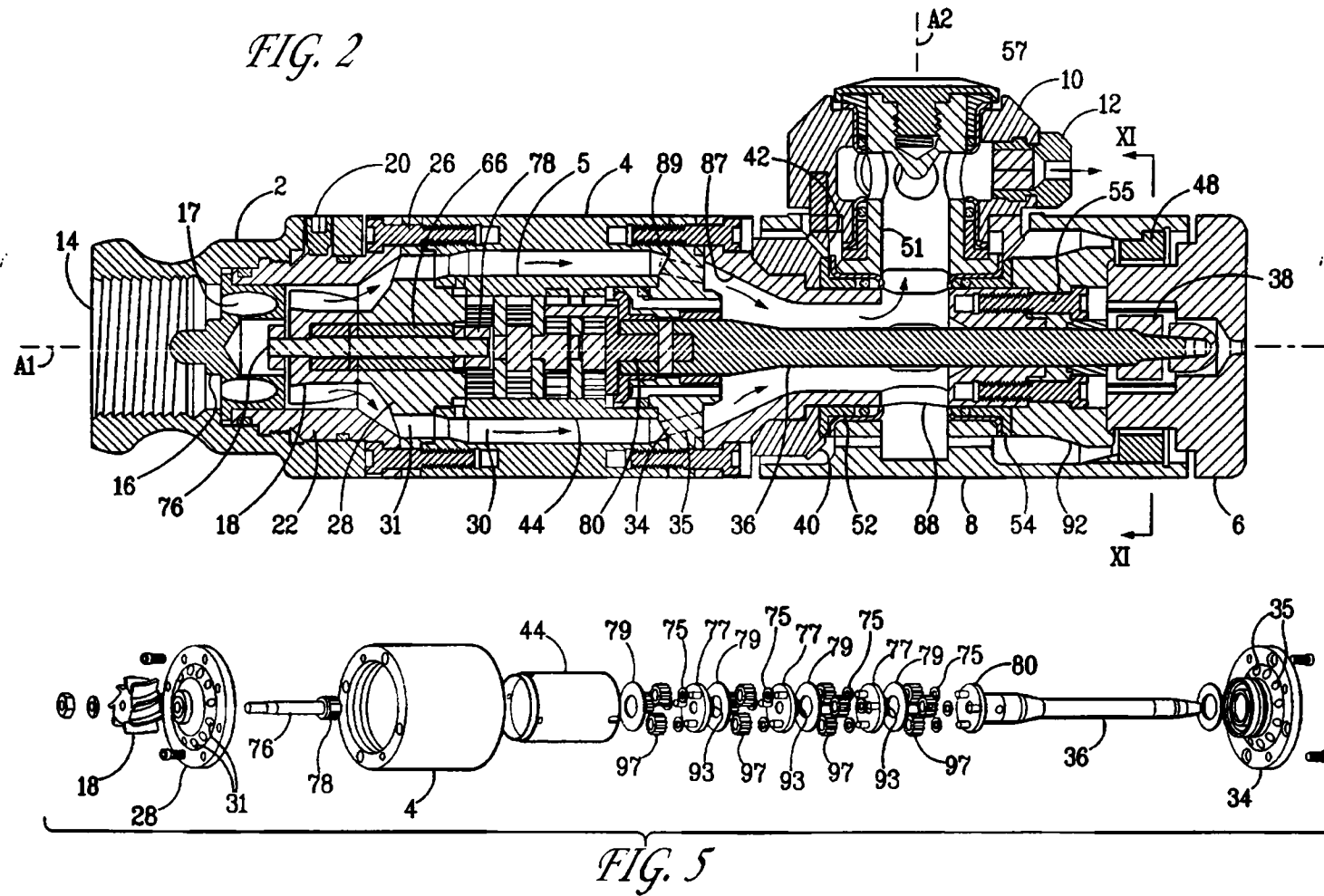
May 13, 2003

Sheet 1 of 6

US 6,561,199 B2

FIG. 1



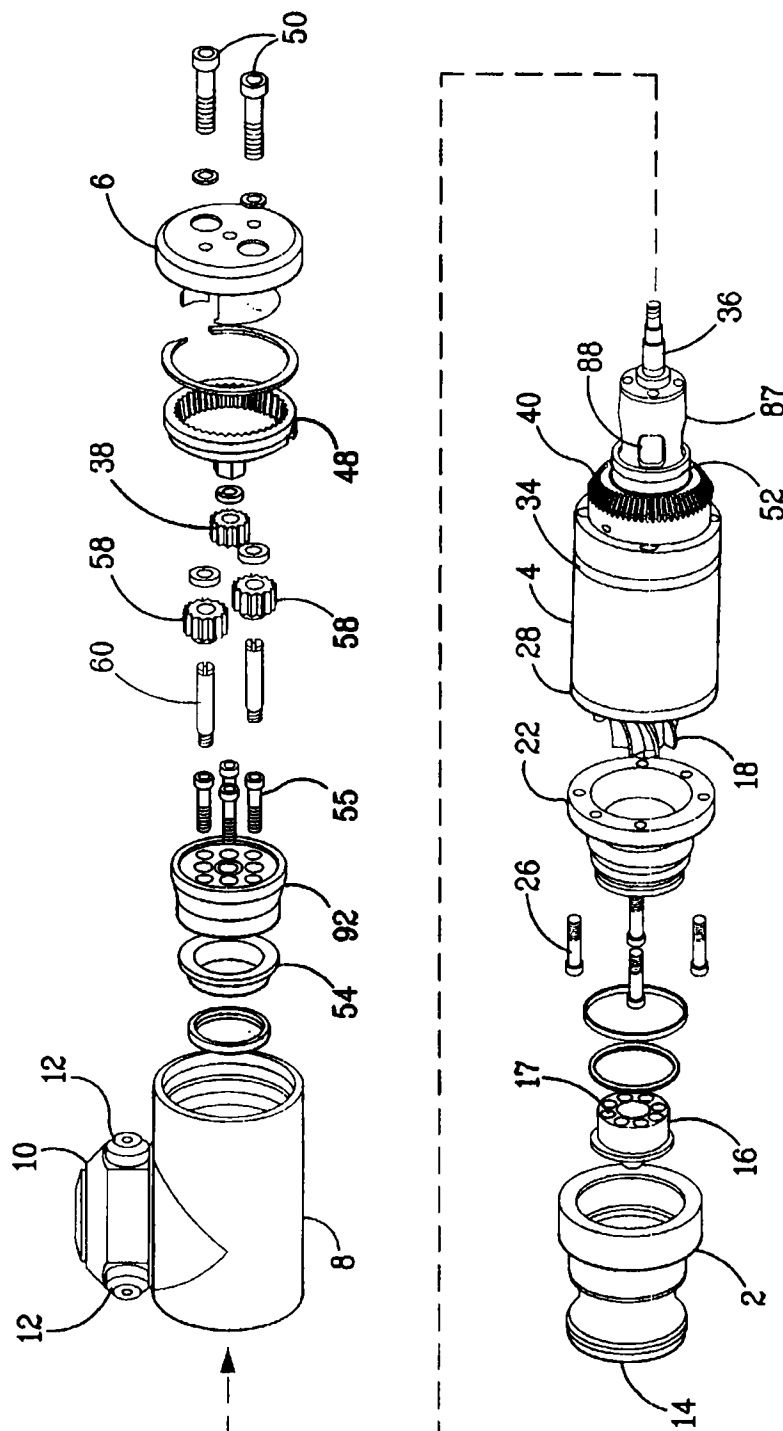


U.S. Patent

May 13, 2003

Sheet 3 of 6

US 6,561,199 B2



U.S. Patent

May 13, 2003

Sheet 4 of 6

US 6,561,199 B2

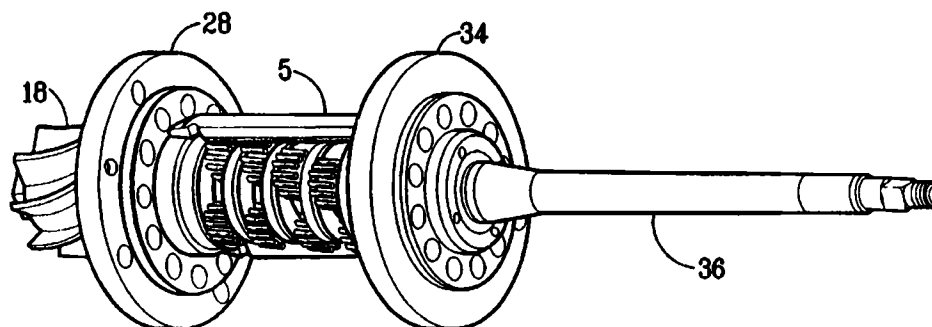


FIG. 6

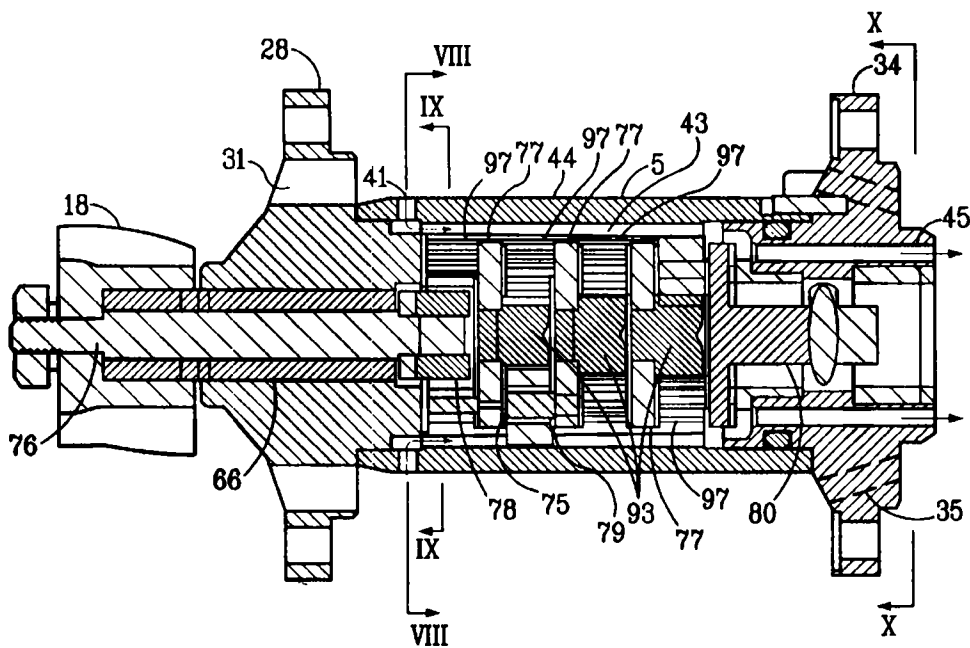


FIG. 7

U.S. Patent

May 13, 2003

Sheet 5 of 6

US 6,561,199 B2

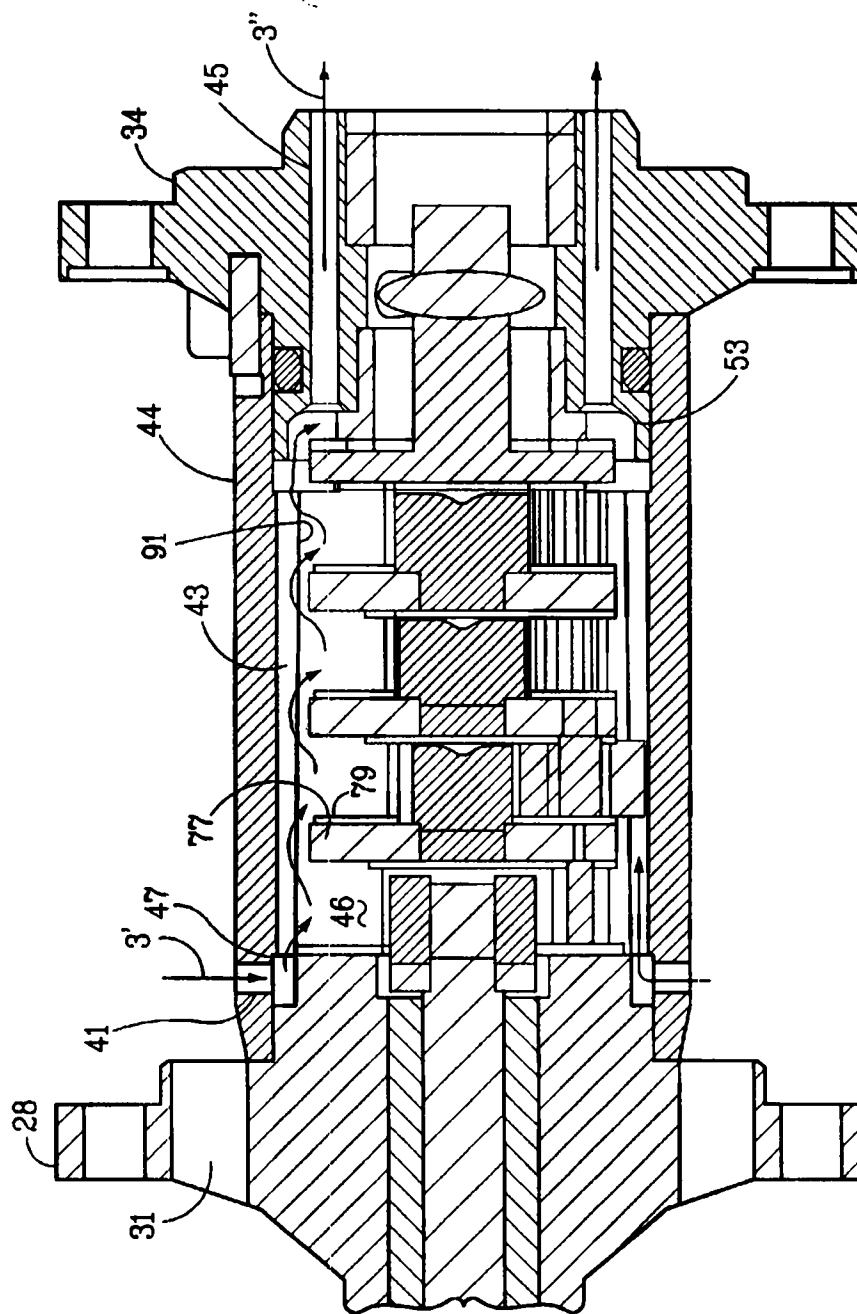


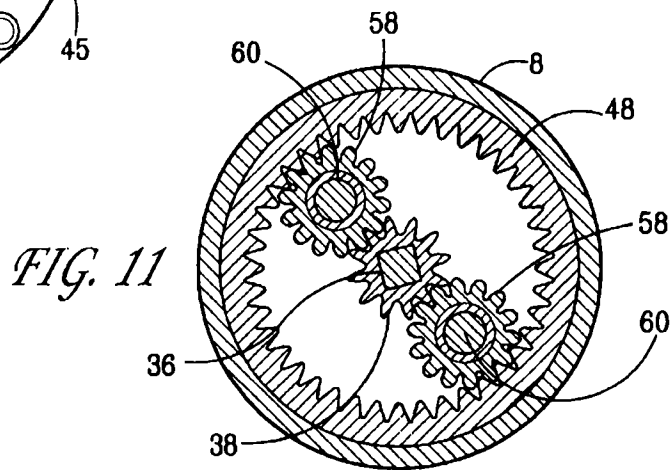
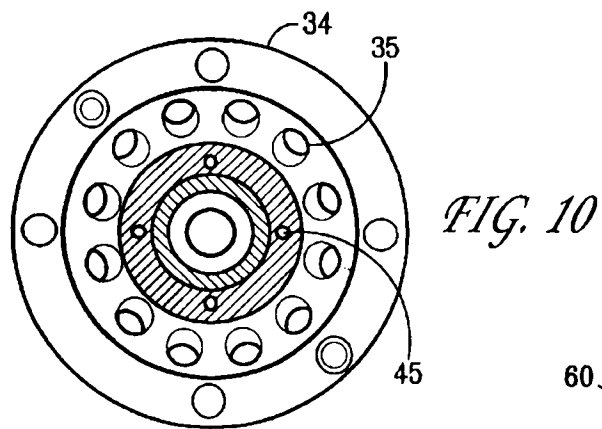
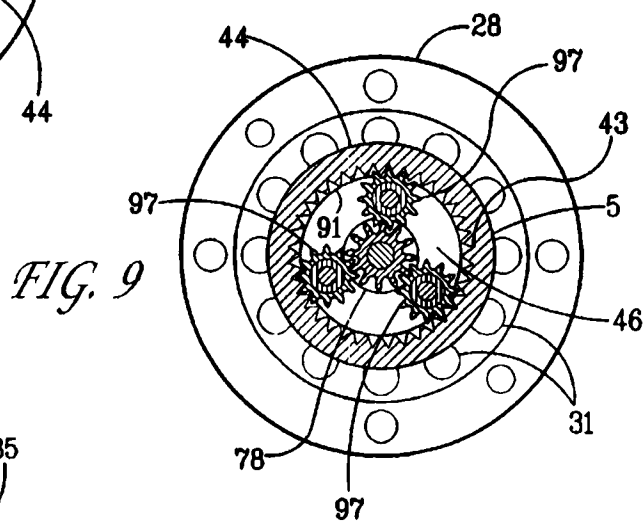
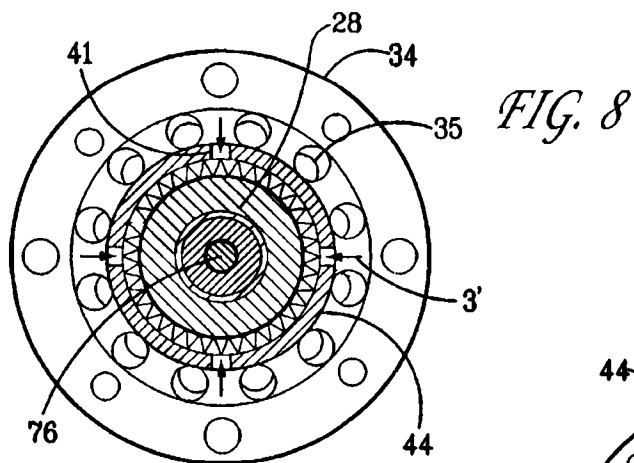
FIG. 7A

U.S. Patent

May 13, 2003

Sheet 6 of 6

US 6,561,199 B2



US 6,561,199 B2

1

**CLEANING APPARATUS ESPECIALLY
ADAPTED FOR CLEANING VESSELS USED
FOR SANITARY PRODUCTS, AND METHOD
OF USING SAME**

FIELD OF THE INVENTION

The present invention relates to an apparatus and method for cleaning vessels, such as tanks and barrels, using a pressurized fluid stream. More specifically, the present invention relates to a vessel cleaning apparatus and method that is especially well suited to cleaning vessels that cannot be contaminated with oil or other lubricants, such as a vessel used for processing sanitary products.

BACKGROUND OF THE INVENTION

Vessels, such as tanks, are frequently cleaned by inserting a cleaning machine, which is supplied with heated, pressurized cleaning fluid, through a access port in the vessel. The cleaning machine ejects the cleaning fluid as a high velocity jet that scours the inside walls of the tank so as to effect a cleaning action. In order to obtain as wide a coverage as possible, such cleaning apparatus frequently employ rotating nozzles that sweep around as they eject the cleaning fluid. Cleaning apparatus sold by Gamajet Cleaning Services, Inc., assignee of the current invention, achieve almost 360° coverage by rotating the nozzles around two mutually perpendicular axes. In such apparatus, the rotation of the nozzles is driven by a gear train that is, in turn, driven by the incoming flow of cleaning fluid via an impeller connected to the drive shaft for the gear train. Consequently, such apparatus are sometimes referred to as fluid powered, gear driven tank cleaning machines.

One early version of a fluid powered, gear driven tank cleaning machine, known commercially as the Gamajet III, is shown in U.S. Pat. No. 3,637,138 (Rucker). In the late 1980's, Gamajet introduced the Gamajet IV cleaning machine, shown in U.S. Pat. No. 5,012,976 (Loberg), which had a relatively large maximum flow rate of 300 GPM. Like the Gamajet III, the Gamajet IV featured a gear train that comprised numerous stages of pinion and spur gears that ultimately drove a ring gear fixed on a rotating T-housing assembly so as to cause rotation of the nozzles assembly about the first axis. A bevel gear fixed on the nozzle assembly mated with a bevel gear fixed on a stem housing, which remains stationary, so that rotation of the nozzle assembly about the first axis caused rotation of the nozzles about the second axis. The fluid inlet was formed at one end of the machine, while the gear train was disposed at the other end of the machine. The rotating nozzle assembly was disposed between the inlet and the gear train. The gear train was lubricated by the cleaning fluid flowing through the machine.

In order to enable the impeller to operate at an efficient speed without causing the nozzles to spin too quickly, which can result in the production of a mist rather than a strong jet, the gear trains of fluid powered, gear driven tank cleaning machines must be capable of high speed reduction. In both the Gamajet III and IV, this high speed reduction was achieved by means of a number of successive stages of spur and pinion gears. In each stage, a small input pinion gear turns a large output spur gear, thereby causing an incremental speed reduction. The output spur gear of that stage is connected to a small input pinion gear of the next stage, and so on. Unfortunately, this approach results in a relatively large gear train. Thus, the gear box of the Gamajet IV is over

2

four inches in diameter. When combined with the nozzle housing, the width of the machine is about 6 inches so that the minimum entry opening for the machine is over 6 inches. Consequently, such machines cannot be used in some applications, such as small tanks, which feature relatively small entry ports. Moreover, Gamajet IV machines were relatively heavy, approximately 30 lbs, making their manipulation during installation and use difficult.

In 1994, Gamajet introduced the Gamajet V tank cleaning machine, which is shown in U.S. Pat. No. 5,954,271 (Minh et al.). As a result of its configuration, the gear train of the Gamajet V is housed in a gear box having a diameter of only approximately 2 inches. This is only one-half the diameter of the Gamajet IV gearbox. As a result of the reduced size of the gear box, together with the use of a compact nozzle housing, the Gamajet V can be easily inserted into a 3 inch diameter access port. In addition, the Gamajet V is relatively light weight, weighing only about 7 lbs. The gear train of the Gamajet V featured three stages of gears rotating within a rotating cylindrical ring gear. The first and second stages are planetary gears, while the third stage are stationary gears. A first pinion gear, which is driven by the impeller shaft, drives the first stage of planetary gears. The first stage of planetary gears drives a second pinion gear that then drives the second stage of planetary gears. The second stage of planetary gears drives a third pinion gear that then drives the stationary third stage of gears. The stationary gears of the third stage drive the cylindrical ring gear. The cylindrical ring gear drives a pinion gear that, via idler gears, drives the ring gear that rotates the nozzle assembly. As in the Gamajet IV, the fluid inlet of the Gamajet V was formed at one end of the machine, the gear train was disposed at the other end of the machine, and the rotating nozzle assembly was disposed between the inlet and the gear train. The planetary gear train is lubricated by grease and mounted in a sealed housing to minimize contamination of the cleaning fluid by the grease. Nevertheless, gear box leakage can still occur if the seals are compromised. Still later, Gamajet developed a tank cleaning machine, which is shown in U.S. Pat. No. 6,123,271 (Delaney et al.), hereby incorporated by reference in its entirety, that located the planetary gear train between the inlet and the rotating outlet nozzles and improved the sealing of the gear train.

Despite the improvements in gear train sealing, the possibility of contamination of the cleaning fluid, and consequently the vessel being cleaned, with lubricants used within the gear train have limited the use of such cleaning machines in vessels used to process sanitary products in which lubricant contamination cannot be tolerated, such as food, beverages, pharmaceuticals, and personal care products such as shampoo. Consequently, in the past, vessels used for sanitary products that would otherwise have been ideal candidates for cleaning by compact planetary gear driven tank cleaning machines have instead been cleaned by machines that did not require gear trains and, consequently did not require lubrication, such as a non-rotating ball type cleaning apparatus, with numerous discharge nozzles formed about the circumference of a ball. However, such non-rotating apparatus cannot clean as effectively as the planetary gear train driven cleaning machines discussed above.

Consequently, it would be desirable developed a planetary gear driven tank cleaning machine that did not require the use of any lubricants, including lubricants in the planetary gear train, that might contaminate the cleaning fluid.

SUMMARY OF THE INVENTION

It is an object of the current invention to provide an improved cleaning machine for cleaning the inside of ves-

US 6,561,199 B2

3

sels. This and other objects are achieved in an apparatus for cleaning the interior of a vessel by ejecting a rotating stream of cleaning fluid, comprising (i) a first fluid inlet for receiving the cleaning fluid, (ii) a rotatable housing mounted for rotation about a first axis, (iii) a nozzle having a first fluid outlet for ejecting the cleaning fluid received by the first fluid inlet, the nozzle rotatably mounted on the rotatable housing so that the nozzle rotates about a second axis, a first fluid passage placing the first fluid inlet in fluid flow communication with the first fluid outlet, (iv) an input shaft driven by the fluid received by the first fluid inlet, (v) a planetary gear train comprising a sun gear and at least one planetary gear mounted for rotation about the sun gear, the planetary gear train driven by the input shaft, the planetary gear train driving the rotatable housing to rotate about the first axis, (vi) a housing at least partially enclosing the planetary gear train, a second fluid passage formed within the housing, the sun gear and the planetary gear disposed within the second fluid passage, the second fluid passage having a second fluid inlet and a second fluid outlet that together place the second fluid passage in flow communication with the first fluid passage, wherein at least a portion of the cleaning fluid received by the first fluid inlet flows through a portion of the first fluid passage and then flows into the second fluid inlet and then flows through the second fluid passage so as to flow over the sun gear and the planetary gear and then flows through the second fluid outlet so as to reenter the first fluid passage and then flows through the first fluid outlet.

The current invention also encompasses a method of cleaning a vessel suitable for containing a sanitary product, comprising the steps of (i) introducing a cleaning machine into the vessel, (ii) introducing a flow of cleaning fluid into an inlet of the cleaning machine, (iii) rotating an impeller by directing the cleaning fluid to flow over the impeller so that the impeller drives rotation of a planetary gear train, the planetary gear train driving rotation of a rotatable body housing about a first axis, the rotatable body housing driving rotation of a rotatable nozzle housing about a second axis, (v) directing the flow of cleaning fluid received by the inlet through a passage to a nozzle mounted on the rotatable nozzle housing so that the nozzle rotates with the rotatable nozzle housing, (vi) ejecting the cleaning fluid from the nozzle, (vii) cooling and lubricating the planetary gear train by diverting a portion of the flow of cleaning fluid from the passage so as to cause the portion of the cleaning fluid to flow through the planetary gear train and then reintroducing the portion of the cleaning fluid back into the passage so that the reintroduced portion of the cleaning fluid is then ejected from the nozzle.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an isometric view of a vessel cleaning machine according to the current invention.

FIG. 2 is a longitudinal cross-section of the cleaning machine shown in FIG. 1 taken along line II—II shown in FIG. 1.

FIG. 3 is an exploded view of the cleaning machine shown in FIG. 1.

FIG. 4 is an isometric view of the drive train of the cleaning machine shown in FIG. 1.

FIG. 5 is an exploded view of the planetary gear train portion of the drive train assembly shown in FIG. 4.

FIG. 6 is an isometric view, partially cut away, of the planetary gear train portion of the drive train assembly shown in FIG. 4.

4

FIG. 7 is a detailed longitudinal cross-section of the planetary gear train shown in FIG. 6.

FIG. 7(a) is a view similar to FIG. 7 but with the planetary gears deleted from the upper half of the cross-section to better illustrate the flow path of cleaning fluid through the planetary gear train.

FIG. 8 is a transverse cross-section through the planetary gear train shown in FIG. 7 taken along line VIII—VIII.

FIG. 9 is a transverse cross-section through the planetary gear train shown in FIG. 7 taken along line IX—IX.

FIG. 10 is a transverse cross-section through rear bearing housing taken along line X—X shown in FIG. 7.

FIG. 11 is a transverse cross-section through the gearing for the T-housing taken along line XI—XI shown in FIG. 2.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A vessel cleaning machine 1 according to the current invention is shown in FIG. 1. The cleaning machine 1 is primarily comprised of a stationary structure and a rotating structure. As shown in FIGS. 1 and 2, the stationary structure is comprised of an inlet housing 2, an upper stem 4 and a base 6. An inlet 14 is formed within the inlet housing 2 and forms one end of the machine. The other end of the machine is formed by the base 6. The rotating structure is comprised of a rotating T-housing 8 and a nozzle housing 10 mounted on the T-housing. Preferably, three spray nozzles 12 are mounted on the nozzle housing 10.

In operation, pressurized cleaning fluid 3 is supplied to the machine inlet 14, for example via a hose threaded into the inlet housing 2. When the apparatus is used to clean a vessel intended for sanitary products, the cleaning fluid is typically water, which may be at ambient temperature or may be heated to a temperature as high as about 190° F. As discussed more fully below, the fluid 3 drives gearing that causes the T-housing 8, including the nozzle housing 10, to rotate about axis A1 and causes the nozzle housing to rotate about axis A2, which is preferably perpendicular to axis A1. Eventually, the cleaning fluid 7 is ejected from the spray nozzles 12. Since the nozzles rotate about both axes A1 and A2, the spray pattern they produce provides essentially 360° coverage so as to provide effective cleaning of the vessel walls.

FIGS. 3–11 show the cleaning machine 1 in more detail. The inlet housing 2 is threaded onto the cap 22 of the upper stem 4 and secured by means of a set screw 20. The stem cap 22 is attached by screws 26 to the upper stem 4. The T-housing 8 is mounted on front and rear bearings 52 and 54, respectively. The bearings 52 and 54 are mounted on a stem 87 that is mounted to the upper stem 4 by means of screws 89. This arrangement enables the T-housing 8 to rotate about the centerline of the upper stem 4 and stem 87, which forms the axis A1.

A swirler 16, is mounted within the stem cap 22 and serves to pre-swirl the incoming stream of pressurized cleaning fluid 3. As discussed in aforementioned U.S. Pat. No. 6,123,271, the swirler 16 preferably comprises a disc-shaped body having a number of passages 17. The passages 17 are oriented at an acute angle with respect to the axis A1 that, preferably, is no more than about 30°. The passages 17 swirl the cleaning fluid 3 before it reaches the impeller 18. Alternatively, a stationary vane type swirler could also be used.

After exiting the swirler 16, the cleaning fluid flows over an impeller 18, to which it imparts sufficient torque to rotate

US 6,561,199 B2

5

an input drive shaft 76 on which the impeller is mounted. The input drive shaft 76 is supported by a front bearing housing 28 in which a bearing containing a tungsten carbide sleeve 66 is press mounted. An input pinion gear 78 mounted on the end of the input drive shaft 76 drives a planetary gear train 5.

The planetary gear train 5 is enclosed within a housing formed by the front bearing housing 28, a cylindrical ring gear 44, and a rear bearing housing 34. As shown in detail in FIGS. 6-9, the planetary train 5 is comprised of four stages of planetary gearing, one of which is shown in FIG. 9, and each of which includes three planetary gears 97 that are driven by a sun gear. The sun gear for the first planetary gear stage is formed by the input pinion gear 78 and for the three succeeding stages by gears 93. The sun gears 93 are each affixed to the rear face of a support member 77. The planetary gears are mounted on three shafts that project from the front face of each of the support members 77. Preferably, each planetary gear 97 has a bushing made from carbon filled polyphenylene sulfide. Washers 75 and 79 are disposed on either side of the planetary gears 97. As shown best in FIG. 9, each stage of planetary gears 97 rotate within a cylindrical ring gear 44 having teeth 91 formed on its inside diameter, which causes rotation of the support member 77. The rotation of the support member 77 drives the sun gear 93 of the next stage. The last support member, which is part of the planetary gear train output shaft 80, is connected to an output drive shaft 36, as shown in FIG. 2. Preferably, the speed reduction achieved by the planetary gear train 5 is at least about 250:1, and in one embodiment of the invention is 256:1.

The front end of the output drive shaft 36 is supported by the rear bearing housing 34. An output pinion gear 38 is mounted on the end of the output drive shaft 36. As shown best in FIGS. 4 and 11, the output pinion gear 38 drives two idler gears 58 that are supported by shafts 60. The idler gears 58 are not planetary gears and do not rotate about the A1 axis. The shafts 60 extend between an idler shaft base 92 and the base 6. The idler shaft base 92 is secured to the stem 87 by screws 55, while the base 6 is secured to the idler shaft base by means of screws 50. As shown in FIG. 11, the idler gears 58 drive a ring gear 48, retained in the T-housing 8. The ring gear 48 is fixed to the T-housing 8 by means of a key 49 so that rotation of the ring gear 48 drives rotation of the T-housing.

The gearing shown in FIG. 11 results in an additional speed reduction that is preferably at least about 3:1, and is more preferably about 3.33:1, so that, when combined with the planetary gear train 5, the total gear reduction is at least about 750:1, and in one embodiment of the invention is about 850:1. Consequently, the speed of rotation of the T-housing 8 is reduced by a factor of at least about 750:1 compared to the speed of rotation of the impeller 18. This arrangement allows the impeller 18 to turn at

high speed in order to derive sufficient energy from the cleaning fluid 3 while allowing the nozzles 12 to turn at sufficiently low speed to effect proper cleaning.

As shown in FIG. 2, a stationary bevel gear 40 is attached to the stem 87. The bevel gear 40 engages a bevel gear 42 fixed to the bottom of the nozzle housing 10. Thus, rotation of the T-housing 8 about axis A1 under the urging of the ring gear 48 and other gearing, shown in FIG. 4, causes the stationary bevel gear 40 to drive the bevel gear 42, thereby causing the nozzle housing 10 to rotate about its axis A2. The gear ratio between the bevel gears 40 and 42 is preferably slightly greater than 1:1 so that each 360°

6

revolution of the T-housing 8 causes the nozzle housing 10 to rotate about 366°.

The flow path of the cleaning fluid 3 through the machine will now be discussed with reference to FIG. 2. After flowing over the swirler 16 and the impeller 18, the fluid flows through an annular passage 30. The initial portions of the passage 30 are formed by an annular region created between the stem cap 22 and the front bearing housing 28 and then by a plurality of holes 31 formed within the front bearing housing 28. The intermediate portions of the passage 30 are formed by an annular region created between the ring gear 44 and the upper stem 4 and then by holes 35 in the rear bearing housing 34. The final portions of the passage 30 are formed first by an annular region created between the output drive shaft 36 and the stem 87, then by four large openings 88 formed in the stem, then by a nose portion 51 of the T-housing 8, and then by openings 57 in the nose. From the openings 57 in the nose 51, the cleaning fluid 7 flows radially outward through outlets formed in the nozzles 12.

As shown best in FIGS. 7(a) to 9, according to an important aspect of the current invention, a portion 3' of the cleaning fluid, flow axially through the portion of flow path 30 disposed in the upper stem 4 is diverted into a series of radially oriented holes 41 formed in the ring gear 44. Few the inlet holes 41, the cleaning fluid 3' continues to flow radially inward to an annular inlet manifold 47 formed by a relief in the rear face of the front bearing housing 28. From the manifold 47 the cleaning fluid 3' flows axially along the valleys 43 formed between the teeth 91 on the inside diameter of 30 the ring gear 44 and then into the space 46 within the ring gear that is between the planetary gears 97 of the first stage of planetary gearing. The cleaning fluid 3' then flows axially from stage to stage of the planetary gear train 5 by flowing through the valleys 43 in the ring gear teeth 91 and between the small radial gap between the planetary gear support members 77 or washers 79 and the ring gear teeth. After exiting the last stage of planetary gearing, the cleaning fluid 3' flows into an annular outlet manifold 53 formed by a relief in the front face of the rear bearing housing 34. From the outlet manifold 53, the cleaning fluid 3' is directed to a series of four axially oriented holes 45 extending through the rear bearing housing 34. From the holes 45, the now somewhat heated cleaning fluid 3' flows axially so as to return to the passage 30, specifically, the portion of the passage 30 formed between the stem 87 and the output drive shaft 36.

Note that since the inlet passages 41 and outlet passages 45 of the planetary gear train cooling flow path are located between the cleaning fluid inlet 14 and the discharge nozzles 12, and the inlet passages 41 are disposed upstream of the outlet passages 45 with respect to the main cleaning fluid passage 30, there is ample pressure drop available to ensure an adequate flow of cleaning fluid 3' through the planetary gear train.

Since the ring gear 44 is disposed within the intermediate portion of the passage 30, cleaning fluid 3 flows over the ring gear so as to absorb a portion of the heat generated within the planetary gear train 5. Moreover, by flowing directly through the planetary gear train 5 and over the planetary gears 97 and sun gears 78 and 93, the diverted portion 3' of the cleaning fluid cools and lubricates the planetary gear train 5. Preferably, the amount of cooling and lubrication is sufficient so that oil-based lubricants, such as grease, or other lubricants considered to be contaminants with respect to sanitary products, such as lithium grease, need not be used in the planetary gear train 5. Most preferably, no oil-based or other lubricants considered to be contaminants with

US 6,561,199 B2

7

respect to sanitary products would be used anywhere in the cleaning machine.

In order to accommodate any reduction in lubrication and cooling associated with using cleaning fluid as essentially the exclusive cooling and lubrication medium, all of the components of the cleaning machine are preferably made of materials that will not rust or corrode when exposed to cleaning fluid. Most preferably, except for bushings and seals, the entire cleaning machine is made from stainless steel alloys. In one embodiment of the invention, the portions of the machine that are more highly loaded—such as the sun 78, 93 and planetary gears 97, the shafting 36, 76, 80, the planetary gear support members 77, the ring gear 44, etc.—are made from 17-4 PH stainless steel heat treated to H-900. Other, more lightly loaded components—such as the washers 75, 79—are made from 316 stainless steel.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification, as indicating the scope of the invention.

What is claimed:

1. An apparatus for cleaning the interior of a vessel by ejecting a rotating stream of cleaning fluid, comprising:

- a) a first fluid inlet for receiving said cleaning fluid;
- b) a rotatable housing mounted for rotation about a first axis,
- c) a nozzle having a first fluid outlet for ejecting said cleaning fluid received by said first fluid inlet, said nozzle rotatably mounted on said rotatable housing so that said nozzle rotates about a second axis, a first fluid passage placing said first fluid inlet in fluid flow communication with said first fluid outlet;
- d) an input shaft driven by said cleaning fluid received by said first fluid inlet;
- e) a planetary gear train comprising a sun gear and at least one planetary gear mounted for rotation about said sun gear, said planetary gear train driven by said input shaft, said planetary gear train driving said rotatable housing to rotate about said first axis;
- f) a housing at least partially enclosing said planetary gear train, a second fluid passage formed within said housing, said sun gear and said planetary gear disposed within said second fluid passage, said second fluid passage having a second fluid inlet and a second fluid outlet that together place said second fluid passage in flow communication with said first fluid passage, wherein at least a portion of said cleaning fluid received by said first fluid inlet flows through a portion of said first fluid passage and then flows into said second fluid inlet and then flows through said second fluid passage so as to flow over said sun gear and said planetary gear and then flows through said second fluid outlet so as to reenter said first fluid passage and then flows through said first fluid outlet.

2. The cleaning apparatus according to claim 1, wherein said second fluid passage comprises an initial passage portion disposed adjacent said second fluid inlet, said initial portion of said second fluid passage being approximately radially oriented, whereby said portion of said cleaning fluid flows approximately radially inward through said initial portion of said second fluid passage after flowing through said second fluid inlet.

3. The cleaning apparatus according to claim 2, wherein at least a portion of said first fluid passage is approximately axially oriented, said second fluid inlet being formed in said

8

axially oriented portion of said first fluid passage, whereby said portion of said cleaning fluid turns approximately radially inward in order to flow from said first fluid passage into said second fluid inlet of said second fluid passage.

4. The cleaning apparatus according to claim 2, wherein said second fluid passage further comprises an intermediate passage portion disposed adjacent said initial passage portion, said sun gear and said planetary gears are disposed in said intermediate portion of said second fluid passage.

5. The cleaning apparatus according to claim 1, wherein said second fluid passage comprises initial, intermediate and final portions, and wherein (i) said initial portion of said second fluid passage is disposed adjacent said second fluid inlet and is approximately radially oriented, whereby said portion of said cleaning fluid flows approximately radially inward from said first fluid passage into said second fluid inlet and the flows approximately radially inward through said initial portion of said second fluid passage, (ii) said sun gear and said planetary gears are disposed in said intermediate portion of said second fluid passage, and (iii) said final portion of said second fluid passage is disposed adjacent said second fluid outlet and is approximately axially oriented, whereby said portion of said cleaning fluid flows approximately axially outward from said second fluid passage through said second fluid outlet and then into said first fluid passage.

6. The cleaning apparatus according to claim 1, wherein said planetary gear train housing is disposed within said first passage, whereby said cleaning fluid flows over said planetary gear train housing.

7. The cleaning apparatus according to claim 1, wherein said planetary gear train is disposed between said first fluid inlet and said first fluid outlet.

8. The cleaning apparatus according to claim 1, wherein said second fluid inlet is disposed at a first location along said first fluid passage, second fluid outlet is disposed at a second location along said first fluid passage, said second location being downstream from said first location with respect to flow of said cleaning fluid through said first fluid passage.

9. The cleaning apparatus according to claim 1, wherein said planetary gear housing comprises a cylindrical ring gear having a plurality of teeth formed around the inside diameter thereof.

10. The cleaning apparatus according to claim 9, wherein each pair of adjacent teeth in said ring gear form a valley therebetween, wherein a portion of said second fluid passages is formed by said valleys.

11. The cleaning apparatus according to claim 1, wherein said sun gear, said planetary gear, and said planetary gear housing are made from stainless steel.

12. The cleaning apparatus according to claim 1, wherein said second axis is perpendicularly oriented with respect to said first axis.

13. An apparatus for spraying a cleaning fluid for cleaning the interior of a vessel used for containing a sanitary product that minimizes the possibility of oil-based lubricants contaminating said cleaning fluid, comprising

- a) a stationary assembly, said stationary assembly forming a first fluid inlet for receiving said cleaning fluid, a first gear affixed to said stationary assembly;
- b) a first rotatable housing mounted for rotation about a first axis, a first fluid outlet formed in said first rotatable housing for ejecting said cleaning fluid received by said first fluid inlet, a second gear affixed to said first rotatable housing and engaging said first gear;
- c) a second rotatable housing, said second rotatable housing mounted for rotation about a second axis oriented

US 6,561,199 B2

9

substantially perpendicularly with respect to said first as, said first rotatable housing mounted on said second rotatable housing whereby rotation of said second rotatable housing about said second axis causes said first rotatable housing to also rotate about said second axis, said engagement of said first and second gears causing said first gear to drive rotation of said first rotatable housing about said first axis when said first rotatable housing rotates about said second axis,

- d) a first fluid passage extending through said stationary assembly and said first and second rotatable housings so as to place said first fluid inlet in fluid flow communication with said first fluid outlet;
- e) a rotatable impeller disposed in said stationary assembly so as to be driven by said cleaning fluid flowing through said first fluid inlet;
- f) a planetary gear train driven by said impeller, said planetary gear train driving said rotation of said second rotatable housing about said second axis, said planetary gear train comprising a sun gear and at least one planetary gear mounted for rotation about said sun gear;
- g) a second fluid passage extending through said planetary gear train and in flow communication with said first fluid passage, whereby a portion of said cleaning fluid flowing through said first fluid passage flows through said second fluid passage, said planetary gear train being lubricated solely by said portion of said cleaning fluid flowing therethrough.

14. The cleaning apparatus according to claim 13, wherein said planetary gear train comprises a gear train housing enclosing said planetary gear train, at least a portion of said second fluid passage extending through said gear train housing.

10

15. The cleaning apparatus according to claim 14, wherein said gear train housing comprises a ring gear.

16. The cleaning apparatus according to claim 14, wherein an initial portion of said portion of said second fluid passage extending through said gear train housing is approximately radially oriented.

17. The cleaning apparatus according to claim 14, wherein said first rotatable housing comprises a nozzle, and wherein said first fluid outlet is formed by said nozzle.

18. A method of cleaning a vessel suitable for containing a sanitary product, comprising the steps of:

- a) introducing a cleaning machine into said vessel,
- b) introducing a flow of clean fluid into an inlet of said cleaning machine;
- c) rotating an impeller by directing said cleaning fluid to flow over said impeller so that said impeller drives rotation of a planetary gear train, said planetary gear train driving rotation of a rotatable body housing about a first axis, said rotatable body housing driving rotation of a rotatable nozzle housing about a second axis;
- d) directing said flow of cleaning fluid received by said inlet through a passage to a nozzle mounted on said rotatable nozzle housing so that said nozzle rotates with said rotatable nozzle housing;
- e) ejecting said cleaning fluid from said nose,
- f) cooling and lubricating said planetary gear train by diverting a portion of said flow of cleaning fluid from said passage so as to cause said portion of said cleaning fluid to flow through said planetary gear train and then reintroducing said portion of said cleaning fluid back into said passage so that said reintroduced portion of said cleaning fluid is then ejected from said nozzle.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,561,199 B2
DATED : May 13, 2003
INVENTOR(S) : Bentley F. Gleeson et al.

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 2,

Line 19, delete "fiat" and insert -- first --.

Column 6,

Line 4, delete "Aft" and insert -- After --.

Line 19, insert -- . -- after "12".

Line 23, delete "flaw" and insert -- flow --.

Column 9,

Line 2, delete "as," and insert -- axis, --.


Line 10, delete "sad" and insert -- said --.

Line 26, delete "nose" and insert -- nozzle --.

Line 27, delete "flaws" and insert -- flows --.

Signed and Sealed this

Fifteenth Day of July, 2003

A handwritten signature in black ink, appearing to read "James E. Rogan", written over a horizontal line.

JAMES E. ROGAN
Director of the United States Patent and Trademark Office

EXHIBIT B



Spraying Systems Co.[®]

Experts in Spray Technology

TankJet[®] 55A

Tank Cleaning Machine



TJ55A

Operation & Maintenance Instructions

MI-TJ55A

TABLE OF CONTENTS

GENERAL SAFETY INSTRUCTIONS.....	3
PRINCIPLE OF OPERATION	4
TANKJET 55A MODELS	4
CONSTRUCTION.....	4
MATERIAL	4
PRINCIPLES OF OPERATION.....	4
CLEANING DIAMETER.....	4
INSTALLATION.....	4
OPERATION	4
SERVICING.....	5
Replacement Parts	
Disassembly	
Assembly	
TJ55A PARTS LIST	6
TJ55A SPECIFICATIONS	7
TROUBLESHOOTING GUIDE.....	8
WARRANTY.....	8
EC DECLARATIONS	9

IMPORTANT! *Read all instructions in this manual before operating machine.*

GENERAL SAFETY INSTRUCTIONS

READ AND FOLLOW INSTRUCTIONS:

WARNING: All safety related and operating instructions should be read before the nozzle is operated. Follow all operating instructions. Failure to do so could result in serious injury.

- **WARNING:** It is important to recognize proper safety precautions when using a pressurized spray system. Fluids under pressure can penetrate skin and cause severe injury.
- **WARNING:** When dealing with pressure applications, the system pressure should never exceed the lowest rated component. Always know your system and all component capabilities, maximum pressures and flow rates.
- **WARNING:** Before performing any maintenance, make sure all liquid supply lines to the machine are shut off and/or disconnected and chemical/fluid are drained.
- **WARNING:** The use of any chemicals requires careful control of all worker hygiene.
- **WARNING:** Spraying Systems Co. does not manufacture or supply any of the chemical components used in this equipment and is not responsible for their effects. Because of the large number of chemicals that could be used and their different chemical reactions, the buyer and user of this equipment should determine compatibility of the materials used and any of the potential hazards involved.
- **WARNING:** Spraying Systems Co. strongly recommends the use of appropriate safety equipment when working with potentially hazardous chemicals.
- **WARNING:** Before use be sure appropriate connections are secure and made to withstand weight and reaction forces of the operating unit.

This equipment includes but is not limited to:

- Protective hat
- Safety glasses or face shield
- Chemical-resistant gloves and apron
- Long sleeve shirt and long pants

NOTE: Always remember to carefully read the chemical manufacturer's label and follow all directions.

- **WARNING:** DO NOT USE TO SPRAY FLAMMABLE LIQUIDS--SUCH USE COULD RESULT IN FIRE OR EXPLOSION CAUSING BODILY INJURY OR DEATH.
- **WARNING:** Never operate tank cleaning equipment in the open due to the potential of bodily injury.
- **WARNING:** It is important to operate equipment within the temperature range of all components. Also insure that appropriate time lapses or proper safety equipment is used when handling components after they're exposed to high temperatures.
- **WARNING:** Removed equipment from the tank before attempting any repairs.
- **WARNING:** Proper hoisting procedures should be used when installing and removing all equipment.
- **WARNING:** If walking on top of a tank is deemed safe and is necessary, use proper safety precautions to protect individuals as well as the equipment.
- **WARNING:** Do not put any part of your body in the tank during operation of the tank cleaner. This is NOT a safe procedure for verification of operation.
- **WARNING:** To insure the safety of the equipment as well the individuals using them, only use Spraying Systems Co. components.
- **WARNING:** When packaging and transporting use structurally sound boxes or crates that can handle the weight of the equipment.
- **WARNING:** Tank cleaners should be flushed out with clean water before they're stored or shipped to minimize health hazards or cross contamination.
- **WARNING:** Do not use any equipment outside the intended purposes of the product. Misuse can result in personal injury or product damage.

The container being cleaned should be sealed as best as possible while the TankJet 55 models are running its cycle. The combination of temperature, cleaning solution, spray impact and the potential toxic materials being cleaned can cause a hazard to anyone in the path of the spray.



PRINCIPLES OF OPERATION

The TankJet® 55A is a hydraulically driven rotating nozzle hub that provides effective cleaning without damaging wine barrels by producing efficient full cone patterns. A gear box is utilized to reduce the high input RPMs produced by pressure washers into a low RPM output to create a controlled rotation to optimize cleaning. The nozzles are driven by a set of bevel gears through a complete 360° path simultaneously in both the vertical and horizontal planes. The compact design of this unit allows for the insertion into standard wine barrels and 55 gallon drums along with many other small entry opening applications. It may be installed on a permanent basis (C.I.P.). Many types of fluids, sanitizers, detergents and caustics may be used through this unit to assist in its cleaning effectiveness (Please note caution below). The unit can be installed and mounted in any orientation such as vertical, horizontal, upside down, or at an angle.

CAUTION: *If chemicals, hazardous materials, operations, and equipment are used in conjunction with this cleaning equipment, it is the responsibility of the user to establish appropriate associated safety and health practices. Prior to application, the user must consult and determine the applicability of regulatory (federal, state, local and facility) safety and environmental agency limitations.*

TANKJET® 55A MODELS

SSCo. Part #	Description
TJ55A*-046	STANDARD DUAL .046" NOZZLE 3/8" NPT
TJ55A*-055	STANDARD DUAL .055" NOZZLE 3/8" NPT
TJ55A*-060	DUAL .060" NOZZLE SLOWER ROTATIONS 3/8" NPT
TJ55A*-066	STANDARD DUAL .066" NOZZLE 3/8" NPT
TJ55A*-078	STANDARD DUAL .078" NOZZLE 3/8" NPT

*Add B for BSPT connections after the model no.

CONSTRUCTION

Referring to the Parts List, the unit consists of the drive assembly, comprising of a rotor, stator, gearbox and shaft; and the nozzle head, comprising of the nozzle body, rotary housing, nozzles and bushings. This construction utilizes the fluid to rotate and therefore doesn't require any other inputs for operation.

MATERIALS

The TankJet® 55A models are made from mainly 316 stainless steel, but also include carbon filled PTFE, UHMW, viton o-rings, 440C stainless steel, and new materials; PEEK, ceramic. 10mL of food grade lubrication is also added to the gearbox.

PRINCIPLE OF ROTATION

The liquid enters the inlet and then flows into the stator that causes the liquid to impact into the rotor. The impact onto the rotor causes rotation of the drive assembly which includes the gearbox for rotational speed reduction. The output of the gearbox will cause rotation of the drive stem and rotary housing. Through the use of a 15 tooth and 16 tooth bevel gear the rotary housing will cause the nozzle hub to spin as well. The meshing of these two bevel gears not only causes rotation but also creates the spray indexing after each revolution in order to provide the 360° coverage. Therefore a total of 16 revolutions will be required to complete a complete cycle and get the full 360° coverage.

CLEANING DIAMETER

The cleaning distance is a function of rotational speed and liquid pressure applied. The slower the unit rotates and the higher the pressure applied, the greater the distance. With the use of the full cone nozzles the effective cleaning diameter is 5 ft (1.5 m), but the actual results will also depend on the type and condition of the soils to be removed.

INSTALLATION

The TankJet® 55A is very easy to install as it has a single 3/8" NPT or BSPT female pipe thread connection. It may be installed on a stand, hard piped, or suspended from a hose and can be mounted in any orientation. In all installations, a suitable strainer should be used (such as a 100 mesh Y strainer) to prevent dirt or scale from clogging the waterways or openings.

WARNING: *In closed tanks, provisions should be made for adequate venting during operation to allow the escape of any gases or volatile vapors which may be produced during operation. This will also prevent the tank from collapsing due to vacuum formation, which can be caused by a cold rinse cycle in a warm tank.*

OPERATION

To start the unit, turn on the fluid. An in-line valve is advised for a slow build-up of liquid pressure in the unit to prevent "water hammer". To stop the unit, turn off the liquid. The unit should always be handled with caution. Reducing any banging of the unit during insertion or removal will increase the longevity of the unit. If the unit is dropped or maltreated it may cause internal damage to the drive assembly, which in turn can affect the performance of the unit. If handled properly the unit will perform well and provide dependable service.

OPERATION & SPECIFICATION

Pipe Connection:	3/8" Female NPT or BSPT
Operating Pressure Range:	200 - 1000 PSI (13.8 - 69 BAR)
Max. Operating Temp:	200° F (93° C)
Flow Capacity:	3 - 8 GPM (11 - 30 LPM)
Cycle Time:	2 - 8 MIN. One full cycle completed every 16 revolutions
*Effective Cleaning Dia.:	To 5 ft maximum (1.5 m)
Nozzle Quantity	2
Installation Hole Dia.:	1.75" (44.5 mm)
Approximate Weight:	5.5 lbs (2.5 kgs)
Material of Construction:	316 Stainless Steel, carbon filled PTFE, UHMW, Viton®, 440C stainless steel, PEEK, ceramic
Recommended Strainer:	100 Mesh (<i>not included</i>)

SERVICING**REPLACEMENT PARTS:**

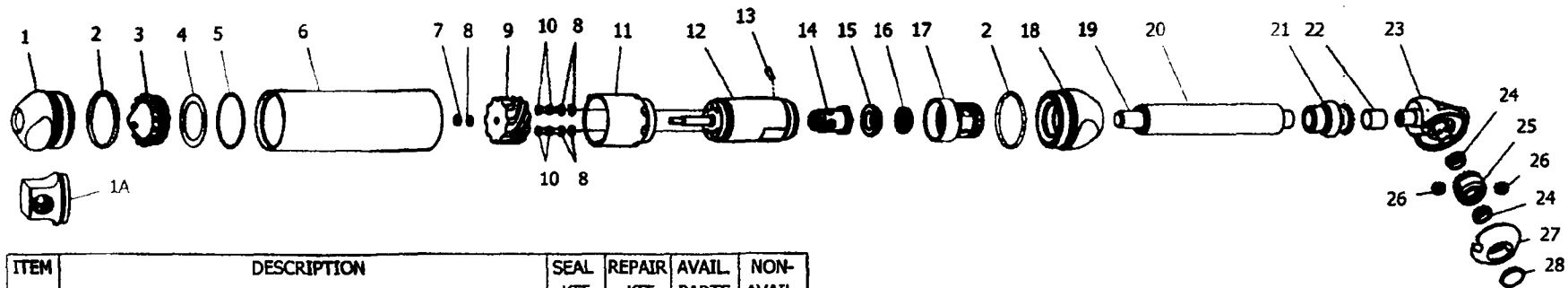
When TankJet® 55A requires replacement parts, only Spraying Systems Co. recommended components should be used to maintain proper machine operation and safety.

DISASSEMBLY:

1. Remove inlet cap (Item 1). Remove screen (5). Then, using needle nose pliers, remove stator (4).
2. Remove main body tube (2). (Suggestion: Secure transition housing (18) in a bench vise to work on the unit.
3. Unthread nut (7) [keep nut and washer (8) for later] and remove rotor (9).
4. Using a 5/64" hex key, remove 4 screws (11) and washers (8). Remove the top housing (10). Remove any debris that might have collected on top of the gearbox.
5. Holding the flats on the fixed stem (13), unthread the gearbox (12).
6. With the transition housing (18) secure, unthread the fixed stem (13) using the flats.
7. Unthread the nozzle hub retainer (27) and remove the nozzle hub gear (25), nozzle hub guard (24), nozzle hub bushing (26) and nozzles (23).
8. Insert supplied tool through the holes on the drive stem (15) and unthread the rotary housing (28).
9. Slide out the drive stem (15) and drive tube (19) and remove the drive tube bushing (16) and seal (17).
10. Remove the tube bushing (21).
11. Unthread the pinion gear (22) from the fixed tube (20), if damaged and in need of repair.
12. Unthread the fixed tube (20) from the transition housing (18), if damaged and in need of repair.

ASSEMBLY:

1. Thread the fixed tube (20) into the transition housing (18) to 50lbf, if taken apart. Use food-grade, 'Blue' Loctite 2046 on the threads.
2. Thread the pinion gear (22) into the fixed tube (20) to 50lbf, if taken apart. Use food-grade, 'Blue' Loctite 2046 on the threads.
3. Slide on the bushing (16) onto the drive tube (19).
4. Holding the drive tube (19), thread on the drive stem (15) to 40lbf. Use food-grade, 'Blue' Loctite 2046 on the threads.
5. Apply food-grade lubricant to the seal (17) and insert in the transition housing (18) with the open-end facing out.
6. Using the supplied tool, insert the drive stem (15), drive tube (19) and bushing (16) through the seal and into the transition housing (18).
7. Thread on fixed stem (13) and tighten to 40lbf. Use food-grade, 'Blue' Loctite 2046 on the threads.
8. Insert tube bushing (21).
9. Insert tool supplied through the holes on the fixed stem (13) and thread the in the rotary housing (28) and torque to 30lbf. Use food-grade, 'Blue' Loctite 2046 on the threads.
10. Thread nozzles (23) into nozzle hub (25) and torque to 20lbf. Use food-grade, 'Blue' Loctite 2046 on the threads.
11. Slide on nozzle hub bushing (26), nozzle hub guard (24), nozzle hub gear (25) and the second nozzle hub bushing (26) before threading on the nozzle hub retainer (27) and torque to 30lbf.
12. Install gearbox pin (14) into the output shaft of the gearbox (12), align with the slot on the drive stem (15) and thread the gearbox into the fixed stem. Use food-grade, 'Blue' Loctite 2046 on the threads.
13. Install top housing (10) onto the gearbox, secure with 4 screws (11) and lock washers (8). Torque to 30lbf.
14. Install rotor (9) on the gearbox (12) input shaft and secure with a lock washer (8) and nut (7). Torque to 30lbf and secure the rotor with a slender tool.
15. Install the stator (4) in the top housing (10), aligning with the post.
16. Install o-ring (3) onto the transition housing (18) and lubricate with food-grade lubricant.
17. Install o-ring (6) into the groove in the main body tube (2) and lubricate with food-grade lubricant.
18. Thread main body tube (2) onto the transition housing (18).
19. Install screen (5) onto the top surface of the stator (4).
20. Install o-ring (3) onto the inlet cap (1) and lubricate with food-grade lubricant.
21. Thread the top housing (1) into the main body tube (2) and torque to 40lbf.



ITEM	DESCRIPTION	SEAL KIT	REPAIR KIT	AVAIL. PARTS	NON-AVAIL. PARTS
1	Inlet Cap, 316 Stainless Steel				
1A	Side Inlet Cap, 316 Stainless Steel (RA - Right Angle Ver.)				
2	O-Ring, Viton®				
3	Stator, 316 Stainless Steel			*	
4	Screen, 316 Stainless Steel				
5	O-Ring, Viton®				
6	Main Body Tube, 316 Stainless Steel				
7	Nut, 316 Stainless Steel, #8-32			*	
8	Washers, 316 Stainless Steel, (5 Req'd)			*	
9	Rotor, 316 Stainless Steel				
10	Screw, 316 Stainless Steel, (4 Req'd)			*	
11	Top Housing, 316 Stainless Steel				
12	Gearbox, 316 Stainless Steel			*	
13	Gearbox Output Pin, 316 Stainless Steel				
14	Drive Stem, 316 Stainless Steel				
15	Drive Tube Bushing, Carbon filled Teflon®				
16	Up Seal, PTFE, Carbon Filled 316 Stainless Steel & Viton®				
17	Fixed Stem, 316 Stainless Steel				
18	Transition Housing, 316 Stainless Steel				
19	Drive Tube, 316 Stainless Steel				
20	Fixed Tube, 316 Stainless Steel				
21	Pinion Gear, 316 Stainless Steel			*	
22	Tube Bushing, UHMW, Ultra High Molecular Weight				
23	Rotary Housing, 316 Stainless Steel				
24	Nozzle Hub Bushing, PTFE Carbon Filled (2 Req'd)				
25	Nozzle Hub Gear, 316 Stainless Steel			*	
26	Nozzle, 316 Stainless Steel (2 Req'd)			*	
27	Nozzle Hub Guard, UHMW, Ultra High Molecular Weight				
28	Nozzle Hub Retainer, 316 Stainless Steel				

No. TJ55A-___ TankJet® 316 Stainless Steel
No. TJ55A-RA-___ TankJet® 316 Stainless Steel (Right Angle Version)
No. TJ55AB-___ TankJet® 316 Stainless Steel (BSPT Version)
No. TJ55AB-RA-___ TankJet® 316 Stainless Steel (BSPT & Right Angle Version)

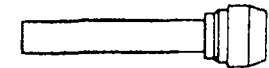
Notes:

For ABCKTJ55A-Seal Kit (include all items marked with a (▲). This kit for routine maintenance.

For ABCKTJ55A-Repair Kit (include all items marked with (■)).

For items available as individual sales (include all items marked with (*)).

For items not available for individual sales (include all items marked with (○)).



All kits include Seal Installation Tool

DESCRIPTION:

No. TJ55A-___ & TJ55AB-___ or
No. TJ55A-RA-___ & TJ55AB-RA-___
TankJet



Spraying Systems Co.®
Spray Nozzles and Accessories
P.O. Box 7900 - Wheaton, IL 60189-7900

REVISION NO.
2

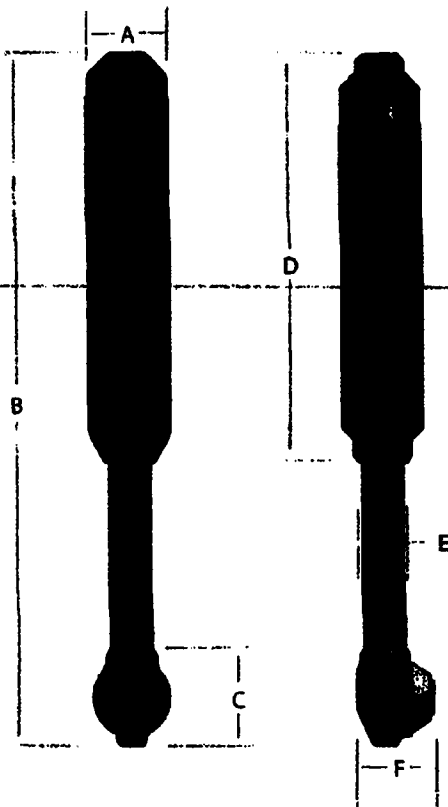
REFERENCE

Parts List No.

PL TJ55A

SHEET 1 OF 1

DWG SIZE: B

TANKJET®55A SPECIFICATIONS

Model No.	A	B	C	D	E	F	Weight
TJ55A	1.75" (44 mm)	15.2" (378 mm)	2.05" (52 mm)	8.8" (223 mm)	.875" (22 mm)	1.6" (41 mm)	5.5 lbs. (2.5 kg)
TJ55A-RA	1.75" (44 mm)	14.9" (378 mm)	2.05" (52 mm)	8.8" (223 mm)	.875" (22 mm)	1.6" (41 mm)	5.5 lbs. (2.5 kg)

Nozzle No.	Capacity GPM (l/min)								
	200 psi (13.8 bar)	300 psi (20.7 bar)	400 psi (27.6 bar)	500 psi (35 bar)	600 psi (41 bar)	700 psi (48 bar)	800 psi (55 bar)	900 psi (62 bar)	1000 psi (69 bar)
TJ55A-046 Nozzle orifice size .046" (1.2 mm)	—	—	—	—	2.8 (10.5)	2.9 (11.1)	3.1 (11.7)	3.2 (12.2)	3.4 (12.7)
Cycle time*	—	—	—	—	6 min	5 min	4.5 min	4 min	3.5 min
TJ55A-055 Nozzle orifice size .055" (1.4 mm)	2.5 (9.4)	2.9 (11.1)	3.3 (12.5)	3.6 (13.7)	3.9 (14.8)	4.2 (15.8)	4.4 (16.7)	—	—
Cycle time*	4 min	3.5 min	3 min	2.5 min	2 min	2 min	2 min	—	—
TJ55A-060 Nozzle orifice size .060" (1.5 mm)	—	—	3.7 (14)	4.1 (15.5)	4.4 (16.8)	4.8 (18)	5 (19.1)	5.3 (20.1)	5.6 (21.1)
Cycle time*	—	—	8 min	7 min	6 min	5.5 min	5 min	4.5 min	4 min
TJ55A-066 Nozzle orifice size .066" (1.7 mm)	3.5 (13.1)	4.1 (15.4)	4.6 (17.4)	5 (19)	5.4 (20.5)	5.8 (21.9)	6.1 (23.1)	6.4 (24.2)	6.7 (25.3)
Cycle time*	7 min	6 min	5 min	4.5 min	4 min	3.5 min	3 min	3 min	3 min
TJ55A-078 Nozzle orifice size .078" (2.0 mm)	4.3 (16.3)	5.2 (19.5)	5.9 (22.2)	6.5 (24.5)	7 (26.5)	7.5 (28.4)	7.9 (30.1)	—	—
Cycle time*	4.5 min	3.5 min	3 min	2.5 min	2 min	2 min	2 min	—	—

*Cycle time refers to the time it takes to complete one full cycle. One full cycle is completed every 16 revolutions

TROUBLESHOOTING

This section lists common problems that may be encountered during the operation of TankJet® series. Proper operating environment and preventative maintenance can prevent many problems. A brief explanation of the problem & solution is followed by directions of where to look in the Operation & Maintenance Manual for further assistance or explanation.

PROBLEM	SOLUTION
TankJet 55A does not rotate	<ul style="list-style-type: none"> • Check if stator is installed and rotor does not slip on input shaft and can be spun with just your finger • Try to rotate the rotary housing to free any debris with in the unit
TankJet 55A rotates very slow	<ul style="list-style-type: none"> • Check if all flow paths are free of debris (from inlet to nozzles) • Review product literature for correct operating range
Nozzle does not build pressure	<ul style="list-style-type: none"> • Check if pumping system is building adequate pressure • Check if all flow paths are free of debris (from inlet to nozzles) • Review product literature for correct operating range • Check for worn nozzles
TankJet 55A was dropped and now it doesn't rotate	<ul style="list-style-type: none"> • Look for signs of damage to the TankJet 55A (bent shafts, gears or tubes) • Disassemble TankJet 55A and narrow down which parts are damaged and replace as needed
Can I change the operating range of the TankJet 55?	<ul style="list-style-type: none"> • Yes, contact your local Spraying Systems Co. representative for resizing

WARRANTY

For newly purchased units the warranty is 18 months from the date of shipment or 12 months from the date of installation, whichever occurs first. This warranty includes manufacturing defects but does not cover the wear parts that include the bushings. This warranty will be void if parts other than those supplied by Spraying System Co. are used.

December 1, 2013
Wheaton, Illinois, USA

EC DECLARATION OF INCORPORATION

We, **Spraying Systems Co.[®]**

North Avenue and Schmale Road, P.O. Box 7900,
Wheaton, IL 60187-7901

Tel: 1.800.95.SPRAY Intl. Tel: 1.630.665.5000

Fax: 1.888.95.SPRAY Intl. Fax: 1.630.260.0842

Visit our Website at <http://www.spray.com> for local representatives

in accordance with the following directive(s):

2006/42/EC The machinery directive

hereby declare that:

Equipment TankJet
Model number 55A

is in conformity with the applicable requirements of the following documents:

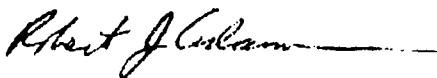
<u>Ref. no.</u>	<u>Title</u>	<u>Edition/Date</u>
EN 982	Safety requirements for fluid power systems and their components – Hydraulics	1996
EN12100-1	Safety of machinery – Basic concepts, general principles for design: Part 1: Basic terminology, methodology	2003
EN12100-2	Safety of machinery – Basic concepts, general principles for design: Part 2: Technical principles	2003
EN ISO 14121-1	Safety of machinery – Risk assessment Part 1: Principles	2007
ASME- B31.1	ASME Boiler and Pressure Vessel Code	2001

and the technical documentation is compiled in accordance with Annex VII(B) of the Directive.

We undertake to transmit, in response to a reasoned request by the appropriate national authorities, relevant information on the partly completed machinery identified above. The method of transmission shall be electronic.

The machinery is incomplete and must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the Directive.

Signed by:



Robert J. Adams, P.E.
Director of Engineering-Industrial Division
Spraying Systems Co.[®]





Spraying Systems Co.®

Experts in Spray Technology

P.O. Box 7900, Wheaton, IL 60187-7901 USA

Tel: 1.800.95.SPRAY

Intl. Tel: 1.630.665.5000

Fax: 1.888.95.SPRAY

Intl. Fax: 1.630.260.0842

www.spray.com



EXHIBIT C

MICHAEL R. PHILIPS, LLC
INTELLECTUAL PROPERTY LAW

Post Office Box 1818
Toms River, NJ 08754-1818
Phone/Fax: 732-323-0012
Email: mphilipsesq@gmail.com

Member:
U.S. Patent Bar
NC & MA State Bars

March 6, 2015

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. James Bramsen, CEO
SPRAYING SYSTEMS COMPANY
P.O. Box 7900
Wheaton, IL 60187-7901

Re: TankJet® 55A

Gentlemen:

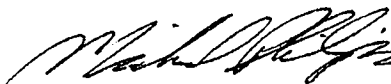
I represent Alfa Laval Tank Equipment, Inc. in matters involving intellectual property law. Alfa Laval, and particularly the Gamajet division, is a leader in the design and development of industrial tank cleaning equipment and has acquired numerous patents for their innovative designs.

It has come to our attention that Spraying Systems Company is marketing a tank cleaning machine identified as TankJet® 55A. In our opinion, if litigated the TankJet® 55A tank cleaning machine is likely to be found to infringe Alfa Laval's patent No. 6,561,199, a copy is enclosed for your review. Therefore, Spraying Systems Company must promptly and completely cease all sales and distribution of the TankJet® 55A cleaning machine.

If you can establish a relevant difference between the TankJet® 55A machine and the claims in the 6,651,199 patent, please send this information to the undersigned.

We expect your affirmative written response to cease sales and distribution of the TankJet 55A within 30 days of the date of this letter. If this compliance is not received by April 6, 2015, Alfa Laval intends to seek full protection under U.S. Patent Law.

Yours truly,



Michael R. Philips

Enclosure: Patent No. 6,561,199
cc: Alfa Laval Tank Equipment, Inc.

EXHIBIT D

LAW OFFICES

LEYDIG, VOIT & MAYER, LTD.
A PROFESSIONAL CORPORATION

TWO PRUDENTIAL PLAZA, SUITE 4900
CHICAGO, ILLINOIS 60601-6745

(312) 616-5600

FACSIMILE: (312) 616-5700

WWW.LEYDIG.COM

May 6, 2015

VIA EMAIL

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DENNIS R. SCHLEMMER
H. MICHAEL HARTMANN
BRUCE M. GAGALA
CHARLES H. MOTTIER
JOHN KILYK, JR.
JOHN B. CONKLIN
MARK J. LISS
PAUL J. KORNICZKY
PAMELA J. RUSCHAU
STEVEN P. PETERSEN
JOHN M. AUGUSTYN
WESLEY O. MUELLER
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MARK JOY
DAVID M. AIRAN
XAVIER PILLAI
GREGORY C. BAYS
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M. DANIEL HEFNER
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CHRISTOPHER J. GASS
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RONAK A. PATEL

WASHINGTON

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IDONGEST E. EBONG
ANDREW W. WEFLER

ALL RESIDENT IN CHICAGO OFFICE EXCEPT AS NOTED WITH ASTERISK
ALL ATTORNEYS ARE LICENSED IN ILLINOIS EXCEPT AS NOTED WITH *

Mr. Michael R. Philips
Michael R. Philips, LLC
Intellectual Property Law
P.O. Box 1818
Toms River, NJ 08754-1818

Re: TankJet ® 55A

Dear Mr. Philips:

We have now had an opportunity to consider your letter of March 6, 2015. Without specifically addressing your infringement charge, it is believed sufficient to say that if any claims of the Gamajet patent 6,561,199 (herein Gamajet '199 patent) are construed to cover the Spraying Systems product, they would be invalid over prior art and unenforceable.

The Gamajet '199 patent discloses and claims a method and apparatus for cleaning vessels in which one or more spray nozzles are driven by a planetary gear train for rotation about multiple axes. The claims basically call for a first fluid passage for directing cleaning fluid about a housing of the planetary gear train and a second fluid passage that communicates with the first fluid passage and directs cleaning fluid through planetary gears of the gear train for lubricating the gear train and dissipating heat.

Prior U.S. patent 4,244,524 (herein '524 patent), as would be understood by a person skilled in the art, similarly teaches a planetary gear driven tank cleaner in which cleaning fluid is directed through a first fluid passage about a housing of the planetary gear train and also through a second passage system through the planetary gears for cooling and lubrication of the planetary gears. (Col. 1, ll. 56-61; col. 4, ll. 14-16, 25-27) Such feature of the '524 patent was known to Gamajet and specifically acknowledged in Gamajet patent 5,954,271 (Col. 1, ll. 19-23).

Mr. Michael R. Philips
May 6, 2015
Page 2

Tank cleaning systems sold or published consistent with the disclosure of the '524 patent, of course, also may very well be invalidating prior art to the '199 patent. Moreover, it is believed that Gamajet knew the Examiner was wrong when he agreed to allow the application for the Gamajet '199 patent based upon his understanding that the closest prior art was Gamajet's prior patent 6,123,271 in which the passing fluid was isolated from the planetary gear. (See Notice of Allowability dated November 6, 2002, page 3, ll. 14-16).

Hence, we do not believe that any claims of the Gamajet '199 patent that might be construed to cover the Spraying Systems product would be enforceable, and accordingly, unless we hear from you further, we will consider the matter closed.

Very truly yours,

LEYDIG, VOIT & MAYER, LTD.

By:


Dennis R. Schlemmer

DRS:jm

JS 44 (Rev. 12/12)

CIVIL COVER SHEET

The JS 44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. (SEE INSTRUCTIONS ON NEXT PAGE OF THIS FORM.)

I. (a) PLAINTIFFS

Alfa Laval Tank Equipment, Inc.
604 Jeffers Circle
Exton, PA 19341

(b) County of Residence of First Listed Plaintiff _____
(EXCEPT IN U.S. PLAINTIFF CASES)

(c) Attorneys (Firm Name, Address, and Telephone Number)

John D. Simmons, Panitch Schwarze Belisario & Nadel, LLP
2005 Market Street, Suite 2200, Philadelphia, PA 19103
215-965-1268

DEFENDANTS

Spraying Systems Co.
161 N. Clark Street, Suite 3100
Chicago, IL 60601

County of Residence of First Listed Defendant _____
(IN U.S. PLAINTIFF CASES ONLY)

NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE TRACT OF LAND INVOLVED.

Attorneys (If Known)

II. BASIS OF JURISDICTION (Place an "X" in One Box Only)

- ☐ 1 U.S. Government Plaintiff
☐ 2 U.S. Government Defendant
☐ 3 Federal Question (U.S. Government Not a Party)
☐ 4 Diversity (Indicate Citizenship of Parties in Item III)

III. CITIZENSHIP OF PRINCIPAL PARTIES (Place an "X" in One Box for Plaintiff and One Box for Defendant)

- | | | | | | |
|---|----------------------------|----------------------------|---|---------------------------------------|---------------------------------------|
| | PTF | DEF | | PTF | DEF |
| Citizen of This State | <input type="checkbox"/> 1 | <input type="checkbox"/> 1 | Incorporated or Principal Place of Business In This State | <input checked="" type="checkbox"/> 4 | <input checked="" type="checkbox"/> 4 |
| Citizen of Another State | <input type="checkbox"/> 2 | <input type="checkbox"/> 2 | Incorporated and Principal Place of Business In Another State | <input type="checkbox"/> 5 | <input type="checkbox"/> 5 |
| Citizen or Subject of a Foreign Country | <input type="checkbox"/> 3 | <input type="checkbox"/> 3 | Foreign Nation | <input type="checkbox"/> 6 | <input type="checkbox"/> 6 |

IV. NATURE OF SUIT (Place an "X" in One Box Only)

CONTRACT <input type="checkbox"/> 110 Insurance <input type="checkbox"/> 120 Marine <input type="checkbox"/> 130 Miller Act <input type="checkbox"/> 140 Negotiable Instrument <input type="checkbox"/> 150 Recovery of Overpayment & Enforcement of Judgment <input type="checkbox"/> 151 Medicare Act <input type="checkbox"/> 152 Recovery of Defaulted Student Loans (Excludes Veterans) <input type="checkbox"/> 153 Recovery of Overpayment of Veteran's Benefits <input type="checkbox"/> 160 Stockholders' Suits <input type="checkbox"/> 190 Other Contract <input type="checkbox"/> 195 Contract Product Liability <input type="checkbox"/> 196 Franchise	TORTS PERSONAL INJURY <input type="checkbox"/> 310 Airplane <input type="checkbox"/> 315 Airplane Product Liability <input type="checkbox"/> 320 Assault, Libel & Slander <input type="checkbox"/> 330 Federal Employers' Liability <input type="checkbox"/> 340 Marine <input type="checkbox"/> 345 Marine Product Liability <input type="checkbox"/> 350 Motor Vehicle <input type="checkbox"/> 355 Motor Vehicle Product Liability <input type="checkbox"/> 360 Other Personal Injury <input type="checkbox"/> 362 Personal Injury - Medical Malpractice PERSONAL INJURY - PRODUCT LIABILITY <input type="checkbox"/> 365 Personal Injury - Product Liability <input type="checkbox"/> 367 Health Care/Pharmaceutical Personal Injury Product Liability <input type="checkbox"/> 368 Asbestos Personal Injury Product Liability PERSONAL PROPERTY <input type="checkbox"/> 370 Other Fraud <input type="checkbox"/> 371 Truth in Lending <input type="checkbox"/> 380 Other Personal Property Damage <input type="checkbox"/> 385 Property Damage Product Liability	FORFEITURE/PENALTY <input type="checkbox"/> 625 Drug Related Seizure of Property 21 USC 881 <input type="checkbox"/> 690 Other LABOR <input type="checkbox"/> 710 Fair Labor Standards Act <input type="checkbox"/> 720 Labor/Management Relations <input type="checkbox"/> 740 Railway Labor Act <input type="checkbox"/> 751 Family and Medical Leave Act <input type="checkbox"/> 790 Other Labor Litigation <input type="checkbox"/> 791 Employee Retirement Income Security Act IMMIGRATION <input type="checkbox"/> 462 Naturalization Application <input type="checkbox"/> 465 Other Immigration Actions	BANKRUPTCY <input type="checkbox"/> 422 Appeal 28 USC 158 <input type="checkbox"/> 423 Withdrawal 28 USC 157 PROPERTY RIGHTS <input type="checkbox"/> 820 Copyrights <input checked="" type="checkbox"/> 830 Patent <input type="checkbox"/> 840 Trademark SOCIAL SECURITY <input type="checkbox"/> 861 HIA (1395ff) <input type="checkbox"/> 862 Black Lung (923) <input type="checkbox"/> 863 DIWC/DIWW (405(g)) <input type="checkbox"/> 864 SSID Title XVI <input type="checkbox"/> 865 RSI (405(g)) FEDERAL TAX SUITS <input type="checkbox"/> 870 Taxes (U.S. Plaintiff or Defendant) <input type="checkbox"/> 871 IRS—Third Party 26 USC 7609	OTHER STATUTES <input type="checkbox"/> 375 False Claims Act <input type="checkbox"/> 400 State Reapportionment <input type="checkbox"/> 410 Antitrust <input type="checkbox"/> 430 Banks and Banking <input type="checkbox"/> 450 Commerce <input type="checkbox"/> 460 Deportation <input type="checkbox"/> 470 Racketeer Influenced and Corrupt Organizations <input type="checkbox"/> 480 Consumer Credit <input type="checkbox"/> 490 Cable/Sat TV <input type="checkbox"/> 850 Securities/Commodities/Exchange <input type="checkbox"/> 890 Other Statutory Actions <input type="checkbox"/> 891 Agricultural Acts <input type="checkbox"/> 893 Environmental Matters <input type="checkbox"/> 895 Freedom of Information Act <input type="checkbox"/> 896 Arbitration <input type="checkbox"/> 899 Administrative Procedure Act/Review or Appeal of Agency Decision <input type="checkbox"/> 950 Constitutionality of State Statutes
REAL PROPERTY <input type="checkbox"/> 210 Land Condemnation <input type="checkbox"/> 220 Foreclosure <input type="checkbox"/> 230 Rent Lease & Ejectment <input type="checkbox"/> 240 Torts to Land <input type="checkbox"/> 245 Tort Product Liability <input type="checkbox"/> 290 All Other Real Property	CIVIL RIGHTS <input type="checkbox"/> 440 Other Civil Rights <input type="checkbox"/> 441 Voting <input type="checkbox"/> 442 Employment <input type="checkbox"/> 443 Housing/Accommodations <input type="checkbox"/> 445 Amer. w/Disabilities - Employment <input type="checkbox"/> 446 Amer. w/Disabilities - Other <input type="checkbox"/> 448 Education PRISONER PETITIONS Habeas Corpus: <input type="checkbox"/> 463 Alien Detainee <input type="checkbox"/> 510 Motions to Vacate Sentence <input type="checkbox"/> 530 General <input type="checkbox"/> 535 Death Penalty Other: <input type="checkbox"/> 540 Mandamus & Other <input type="checkbox"/> 550 Civil Rights <input type="checkbox"/> 555 Prison Condition <input type="checkbox"/> 560 Civil Detainee - Conditions of Confinement			

V. ORIGIN (Place an "X" in One Box Only)

- ☐ 1 Original Proceeding
☐ 2 Removed from State Court
☐ 3 Remanded from Appellate Court
☐ 4 Reinstated or Recopened
☐ 5 Transferred from Another District (specify)
☐ 6 Multidistrict Litigation

VI. CAUSE OF ACTION

Cite the U.S. Civil Statute under which you are filing (Do not cite jurisdictional statutes unless diversity):
28 USC §§1331-132 and 1338(a)

Brief description of cause:

Patent infringement of US Patent No. 6,561,199

VII. REQUESTED IN COMPLAINT:

☐ CHECK IF THIS IS A CLASS ACTION UNDER RULE 23, F.R.Cv.P. DEMAND \$

CHECK YES only if demanded in complaint:

JURY DEMAND: ☒ Yes ☐ No

VIII. RELATED CASE(S) IF ANY

(See instructions):

JUDGE

DOCKET NUMBER

DATE

8/21/15

SIGNATURE OF ATTORNEY OF RECORD

FOR OFFICE USE ONLY

RECEIPT #

AMOUNT

APPLYING IFP

JUDGE

MAG. JUDGE

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA**

CASE MANAGEMENT TRACK DESIGNATION FORM

Alfa Laval Tank Equipment, Inc. :	:	CIVIL ACTION
	:	
v.	:	
	:	
Spraying Systems Co. :	:	NO.

In accordance with the Civil Justice Expense and Delay Reduction Plan of this court, counsel for plaintiff shall complete a Case Management Track Designation Form in all civil cases at the time of filing the complaint and serve a copy on all defendants. (See § 1:03 of the plan set forth on the reverse side of this form.) In the event that a defendant does not agree with the plaintiff regarding said designation, that defendant shall, with its first appearance, submit to the clerk of court and serve on the plaintiff and all other parties, a Case Management Track Designation Form specifying the track to which that defendant believes the case should be assigned.

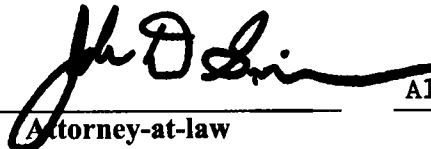
SELECT ONE OF THE FOLLOWING CASE MANAGEMENT TRACKS:

- (a) Habeas Corpus – Cases brought under 28 U.S.C. § 2241 through § 2255. ()
- (b) Social Security – Cases requesting review of a decision of the Secretary of Health and Human Services denying plaintiff Social Security Benefits. ()
- (c) Arbitration – Cases required to be designated for arbitration under Local Civil Rule 53.2. ()
- (d) Asbestos – Cases involving claims for personal injury or property damage from exposure to asbestos. ()
- (e) Special Management – Cases that do not fall into tracks (a) through (d) that are commonly referred to as complex and that need special or intense management by the court. (See reverse side of this form for a detailed explanation of special management cases.) ()
- (f) Standard Management – Cases that do not fall into any one of the other tracks. (X)

8/21/15
Date

215-965-1268

Telephone


Attorney-at-law

215-965-1331

FAX Number

Alfa Laval Tank Equipment, Inc.
Attorney for Plaintiff

jsimmons@panitchlaw.com

E-Mail Address

UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF PENNSYLVANIA — DESIGNATION FORM to be used by counsel to indicate the category of the case for the purpose of assignment to appropriate calendar.

Address of Plaintiff: Alfa Laval Tank Equipment, Inc., 604 Jeffers Circle, Exton, PA 19341

Address of Defendant: Spraying Systems Co., 161 N. Clark Street, Suite 3100, Chicago, IL 60601

Place of Accident, Incident or Transaction: _____
(Use Reverse Side For Additional Space)

Does this civil action involve a nongovernmental corporate party with any parent corporation and any publicly held corporation owning 10% or more of its stock?
(Attach two copies of the Disclosure Statement Form in accordance with Fed.R.Civ.P. 7.1(a)) Yes ☐ No ☒

Does this case involve multidistrict litigation possibilities? Yes ☐ No ☒

RELATED CASE, IF ANY:

Case Number: _____ Judge _____ Date Terminated: _____

Civil cases are deemed related when yes is answered to any of the following questions:

1. Is this case related to property included in an earlier numbered suit pending or within one year previously terminated action in this court?
Yes ☐ No ☒
2. Does this case involve the same issue of fact or grow out of the same transaction as a prior suit pending or within one year previously terminated action in this court?
Yes ☐ No ☒
3. Does this case involve the validity or infringement of a patent already in suit or any earlier numbered case pending or within one year previously terminated action in this court?
Yes ☐ No ☒
4. Is this case a second or successive habeas corpus, social security appeal, or pro se civil rights case filed by the same individual?
Yes ☐ No ☒

CIVIL: (Place ☒ in ONE CATEGORY ONLY)

A. Federal Question Cases:

1. ☐ Indemnity Contract, Marine Contract, and All Other Contracts
2. ☐ FELA
3. ☐ Jones Act-Personal Injury
4. ☐ Antitrust
5. ☐ Patent
6. ☐ Labor-Management Relations
7. ☐ Civil Rights
8. ☐ Habeas Corpus
9. ☐ Securities Act(s) Cases
10. ☐ Social Security Review Cases
11. ☒ All other Federal Question Cases
(Please specify) Patent

B. Diversity Jurisdiction Cases:

1. ☐ Insurance Contract and Other Contracts
2. ☐ Airplane Personal Injury
3. ☐ Assault, Defamation
4. ☐ Marine Personal Injury
5. ☐ Motor Vehicle Personal Injury
6. ☐ Other Personal Injury (Please specify)
7. ☐ Products Liability
8. ☐ Products Liability — Asbestos
9. ☐ All other Diversity Cases
(Please specify) _____

ARBITRATION CERTIFICATION

(Check Appropriate Category)

I, John D. Simmons, counsel of record do hereby certify:

- ☐ Pursuant to Local Civil Rule 53.2, Section 3(c)(2), that to the best of my knowledge and belief, the damages recoverable in this civil action case exceed the sum of \$150,000.00 exclusive of interest and costs;
- ☐ Relief other than monetary damages is sought.

DATE: August 21, 2015

John D. Simmons
Attorney-at-Law

202,405

Attorney I.D.#

NOTE: A trial de novo will be a trial by jury only if there has been compliance with F.R.C.P. 38.

I certify that, to my knowledge, the within case is not related to any case now pending or within one year previously terminated action in this court except as noted above.

DATE: August 21, 2015

John D. Simmons
Attorney-at-Law

202,405

Attorney I.D.#